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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,360	09/19/2006	Saburou Yamagata	MOR-270-A	1223
Andrew R Basile <sup>7590</sup> 03/03/2009				
Young & Basile 3001 W Big Beaver Road Suite 624 Troy, MI 48084				
EXAMINER				
YANG, JIE				
ART UNIT		PAPER NUMBER		
1793				
MAIL DATE		DELIVERY MODE		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

10/593,360

**Applicant(s)**

YAMAGATA ET AL.

**Examiner**

JIE YANG

**Art Unit**

1793

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1.5-10 and 12-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1.5-10, 12-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Claims 2-4 and 11 are cancelled; claims 1 and 5-10 have been amended from original claims; claim 12-16 are added as new claims; and claims 1, 5-10, and 12-16 are pending in application.

### ***Status of the Precious Rejection***

The previous rejections of claims 1, 3-4 and 10 under 35 U.S.C. 112 second paragraph are withdrawn in view the amendment filed on 11/26/2008.

Following rejections are applied to the instant amended claims and the newly added claims to replace the rejections under 35 U.S.C. 102(b) and under 35 U.S.C. 103(a) as stated in the previous office action marked 8/29/2008.

### ***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5-7, 10, 13, 16 are rejected under 35 U.S.C. 102(b) as anticipated by Kazuo (JP 2000-239738, thereafter JP'738).

Regarding claims 1, 10, 13 and 16, JP'738 teaches feeding the heated work piece into hardening agent (paragraph [0001] of JP'738) with vibration generating in a quenching tub in order to remove the vapor film (Abstract, paragraphs [0005], [0010], and fig.1 of JP'738), which reads on the cooling heated metal parts, breaking the vapor film by repeated varies pressure using

oscillations devices as recited in the instant claims 1, 10, and 16. JP'738 teaches the position between oscillating devices and work piece is adjustable in order to remove the vapor film efficiently (paragraphs [0010]-[0011] of JP'738), which covers the horizontally and reciprocally moving oscillating devices in the cooling agent as recited in the instant claims. JP'738 further teaches an oscillatory three dimensional wave (repeatedly varying pressure) in the direction of a vapor film covering a work piece propagated through a quenching agent (Abstract, paragraph [0023] of JP'738). The application of repeatedly varying pressure in the form of a three dimensional wave would inherently result in a change of the pressure applied to the liquid level of the cooling liquid as recited in the instant claims 1, 10, and 16.

Regarding claims 5-7, JP'738 teaches using multiple oscillation devices (Fig. 1, 2, and 5 of JP'738) as claimed in the instant claim 5, JP'738 teaches adjusting the frequency of the oscillation devices (Abstract, paragraph [0023] of JP'738), which reads on the limitations of the instant claims 6 and 7.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 9, 12, and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'738 in view of Saburo et al (JP 2003-286517, thereafter JP'517).

Regarding claims 8, 9, and 12, JP'738 does not specify the further stirring the cooling liquid after the vapor film begins to be broken. JP'517 teaches a quenching method using jet stirring a liquid coolant after applying oscillations with a vibration stirring to liquid coolant in order to break the vapor film (Abstract, claim 1, paragraphs [0008] and [0044] of JP'517). Therefore, it would have been obvious to one skilled in the art to apply jet stirring as taught by JP'517 in the process of JP'738 in order to control the fluctuation of the cooling power (Abstract of JP'517). JP'517 teaches the flow of the jet in jet stirring set to  $5\text{m}^3/\text{hr.}$  and the stirring intensity can be changed according to the shape and construction material of the work hardened (Fig. 10, paragraphs [0020], [0033] and [0039] of JP'517), which reads on the limitation of adjusting intensity of stirring as recited in the instant claim 9.

Regarding claims 14 and 15, JP'517 teaches the jet stirring with flow jet blew off from rocket engine jets into an upflow which goes above the low part of the cooling pool (Fig. 1,

paragraph [0025] of JP'517), which reads on the gas introducing and exhausting into cooling liquid as recited in the instant claims.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 5-10, and 12-16 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jie Yang whose telephone number is 571-2701884. The examiner can normally be reached on IFP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-2721244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JY

/Roy King/  
Supervisory Patent Examiner, Art Unit 1793